Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz	)	GN Docket No. 17-183
	)	

COMMENTS OF BLUETOOTH SPECIAL INTEREST GROUP, INC.

I. INTRODUCTION

These comments are filed by the Bluetooth Special Interest Group, Inc. ("Bluetooth SIG"). Founded in 1998, the Bluetooth SIG is a not-for-profit trade association serving over 32,000 member companies, including leaders in the telecommunications, computing, consumer electronics, automotive, medical, industrial automation, and network industries. The Bluetooth SIG is the organization responsible for overseeing Bluetooth wireless technology, and supports our member companies in three primary ways, including (i) the maintenance and evolution of the Bluetooth specifications, (ii) the operation of a product qualification program to ensure global interoperability, and (iii) the promotion of Bluetooth technology to increase global awareness and understanding.

Bluetooth SIG members are devoted to driving the development of Bluetooth wireless technology and implementing and marketing the technology in their products. Our member companies launched over 17,000 new Bluetooth products and shipped over 3.4 billion units in 2016 alone.

Bluetooth wireless technology continues to evolve, building on its inherent strengths – small form-factor radio, low power, low cost, built-in security, ability to politely co-exist with other technologies in the unlicensed spectrum, ease-of-use, and ad-hoc networking abilities. Bluetooth wireless technology provides manufacturers and consumers with low energy as well as high speed capabilities for wireless devices.

Manufacturers and consumers can choose to enable one or all of these capabilities in Bluetooth enabled devices, depending on device functionality.

Bluetooth wireless technology presently uses unlicensed spectrum in the 2400-2483.5 GHz band under the provisions of § 15.247 of the Commission's Rules[1] and parallel rules in other countries.

The Bluetooth SIG welcomes the Commission's *sua sponte* consideration of new unlicensed spectrum in this proceeding. These comments suggest factors the Commission may wish to consider in drafting more specific proposals in a Notice of Proposed Rulemaking.

II. NEED FOR BOTH ADDITIONAL WIDEBAND UNLICENSED CHANNELS AS WELL AS OTHER BANDWIDTHS

The *Notice of Inquiry* in this proceeding[2] states

> "We invite commenters to discuss whether unlicensed use may be expanded within the 5.925-6.425 GHz band either under our rules governing U-NII devices or under other provisions that would be implemented under our Part 15 rules. Unlicensed devices would need to protect the licensed Federal Communications Commission services that operate in the band."[3]

We welcome this proposal and believe that technical rules can be developed to protect the primary licensed users of this band. We look forward to working with other interested parties to develop such rules that both protect the licensed users and allow new unlicensed use on a noninterfering basis to the licensed satellite and fixed users.

There appears to be an implicit assumption in para. 26 that favors unlicensed devices "with wider channel bandwidths and higher data rates". We agree that there are many applications for use of unlicensed spectrum that need such channel widths and data rates in both intermittent and streaming modes, but we

[1] 47 C.F.R § 15.247

[2] *Notice of Inquiry,* GN Docket No. 17-183, Released August 3, 2017 (https://apps.fcc.gov/edocs_public/attachmatch/FCC-17-104A1_Rcd.pdf) ("*NOI*")

[3] *NOI* at para. 29

would like to point out that there is also growing demand for intermittent access by large numbers of users at more modest data rates. Indeed, Internet of Things ("IoT") generally involves modest data rates for intermittent use by very large numbers of devices. Today's Bluetooth applications require both intermittent (as small as 2 bytes sent infrequently) and streaming modes that require a diverse range of data rates from less than 1 Mbps to 600 Mbps. These Bluetooth applications also have large numbers of users for whom they provide important functionality.

In developing technical rules for possible new unlicensed spectrum in the 6 GHz regions the Commission should consider both wide bandwidth streaming uses and lower bandwidth streaming and intermittent uses and not prejudge the market for new devices in the band. The success of the huge market created by § 15.247 is that the rule gives tremendous technical flexibility to developers and has resulted in applications that were inconceivable when the basic rules was adopted in 1985 in Docket 81-413.[4]

In order to allow for such dynamic creativity in the future, service rules should be created that do not prejudge the type of unlicensed use for this band and gives flexibility to accommodate both wide bandwidth streaming applications as well as intermittent narrowband transmissions from large numbers of users in applications such as IoT.

[4] *Report & Order*, Docket 81-413, May 24, 1985

III. CONCLUSION

The Bluetooth SIG welcomes this *NOI* and its consideration of possible new unlicensed spectrum in the 6 GHz region. The SIG looks forward to collaboration with both licensed incumbents and potential other developers of unlicensed technology to order to assure *both* that use will be interference free to incumbent licensees and that unlicensed capacity will be available or the widest possible number of unlicensed applications – many of which we may not be able to anticipate explicitly at present.

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